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COOPERATION SOUTH



Sharing Innovative Capacities



The emblem of Technical Cooperation among Developing Countries (TCDC) displays a symbolic bridge joining the countries and people of the Southern hemisphere. The centre of the emblem — where the Southern, Northern, Eastern and Western parts of the world join — symbolizes a further and ultimate objective of TCDC: the promotion of truly global partnership for development.

Director,
Special Unit for TCDC:
Abebe Ambatchew

Editor:
Christopher McIntosh

Associate Editor:
Samuel Oglesby

Design and Production:
Esther Kurti, Director
Maureen Lynch
Mary Vengrofski

Translation Manager:
Elizabeth Scott Andrews

Proofreader:
Mila Feliciano

Circulation:
Alison Walton

Distribution:
Alulah Chella
Amit Lissack

Published by:
Special Unit for TCDC
United Nations
Development Programme
One UN Plaza
New York, NY 10017
USA

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Contributions from readers are welcome on specific cases, issues and problems in Technical Cooperation among Developing Countries (TCDC). Short letters are also invited. We reserve the right to edit submitted material.

Send texts to The Editor, Cooperation South, Special Unit for TCDC, United Nations Development Programme, One UN Plaza, New York, NY 10017.

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Credits

Cover: Photomontage by Mary Vengrofski/ UNDP; Page 4 top left: Solidaridad; bottom right: Jessica Johnson; Page 5: Solidaridad; Page 6: IIE; Page 7 top: IIE; bottom: Jessica Johnson; Pages 8&9: Heritage Studios, Sliema, Malta; Page 11: Kiran Uday Singh; Pages 14 & 15: Pakistan International Airlines; Page 21: University of Buenos Aires; Page 22 top: Solar Box Cookers International; Page 23: PLAN International.



Breaking New Ground through TCDC

A message from Abebe Ambatchew, Director of the Special Unit for Technical Cooperation among Developing Countries (TCDC) of the United Nations Development Programme (UNDP).

This issue marks the 15th anniversary of the historic Buenos Aires Plan of Action and its endorsement by the United Nations General Assembly as the blueprint for the promotion and implementation of TCDC. During those 15 years TCDC has made great advances and is now being increasingly utilized, both within the United Nations system and, more importantly, by the developing countries themselves.

Cooperation South magazine has played its part in the growth of TCDC by publicizing the wide range of capacities that developing countries can offer each other. In this issue of the magazine we have decided to focus not on the past but on the future. The theme of this issue is innovation - the exchange of developing country capacities that are at the cutting edge of technology. The examples we have chosen cover a wide range: Pakistan's up-to-date Civil Aviation Training Institute, India's expertise in information technology, Mexico's imaginative Solidaridad scheme for combating poverty, Indonesia's methodology for managing urban development. These

are only a few of the examples of innovative technologies and methods that are available for South-South transfer.

Fifteen years ago the Buenos Aires Plan of Action prescribed new ways, newly perceived and strengthened capacities, which can give major additional impetus to the attack on world poverty and underdevelopment and the establishment of a new economic order. This emphasis on new solutions and approaches is an important part of the spirit of TCDC, and the activities described in this issue show that developing countries are dealing with complex developmental problems by applying innovative approaches and methods.

Christopher McIntosh's services as editor of this magazine end with this issue. UNDP is greatly indebted to him for the improvements he has brought about and the way he has nurtured the evolution of *Cooperation South*.

Mexico: A Forward-looking Partner in TCDC

In recent years Mexico has developed a remarkable range of highly innovative technologies, which it is now making available to other developing countries through its well-organized TCDC programme. This report is by Jessica Johnson.

To foreign eyes Mexico's dramatic and colourful past often seems closer to myth than reality. But the recent so-called "Mexican miracle" is firmly grounded in economic fact. In the past five years foreign debt has been slashed (it now stands at 39 per cent of gross domestic product, compared with 63 per cent in the United States), while fiscal reform and privatiza-

tion have attracted investment and stabilized the economy. Novel solutions, underpinned by an increasingly well-developed infrastructure, are creating a new nation, eager to compete on the world stage.

In a remarkable effort that began in 1989, Mexico has made a determined bid to forge stronger relations with neighbouring Latin Ameri-

can countries as well as with Europe, the Pacific Rim and the Far East. TCDC has played a key role in this international endeavour, permitting Mexico to transfer a variety of innovative technologies to other developing countries.

Much of the credit for these initiatives can be laid at the door of the current head of state, President Salinas de Gortari. While Mexico has been negotiating her role in the Free Trade Treaty with Canada and the US, President Salinas has put particular emphasis on closer economic bilateral links with Latin America. In his fourth state-of-the-nation address last September the President affirmed, in the context of Latin America, that "education and technical and scientific co-operation are the bases for solidarity." It is therefore not surprising that TCDC is a priority theme for

Mexico and that the focal point for TCDC is located in the Secretariat for Foreign Affairs (SRE).

The Secretariat's Department of Scientific and Technical Cooperation is divided into two sections which illustrate Mexico's status, mid-way between the developed and less developed nations. Agustín Sanchez is responsible for supplying expertise to less developed countries in Central America, the Caribbean, Peru, Bolivia and Paraguay, while Horacio Mondragón manages horizontal exchanges with more industrialized nations both in Latin America and in other regions, including Eastern Europe.

Inevitably the greatest volume of Mexican TCDC activity is with Latin America. Similarity in language, traditions and shared cultural experience as well as the distance factor make exchange easier than with more distant areas of the globe.

Combating Poverty

Demand from other Latin American countries has been especially high for a remarkable new social programme developed in Mexico. The National Solidarity Programme (Solidaridad) was initiated in December 1988 as a strategy to eradicate poverty through the organized participation of local communities and municipalities.

"Despite Mexico's modern façade and an annual per capita income of US\$2,500, wealth is very unevenly distributed, and 20% of the population live below the poverty line," says Victor Maldonado, National Consultant for Technological Cooperation in

the Ministry for Social Development (SEDESOL), the government department responsible for Solidaridad. The programme has been hailed as a fresh and imaginative response to this situation.

Although it is described as a mechanism to combat poverty, Solidaridad in fact has a wider significance, as José Luis Medina Aguiar, International Coordinator of the programme, explains:

"The President decided to bring together all the strategies on poverty that have been developed in Mexico over the years, in areas such as health and education, and combine them, creating a more rational and efficient system. Let's say a community wishes to build a road, install a drainage system or improve its drinking water supply. They can now come straight to us instead of having to contend with a multiplicity of different scattered organizations and bureaucracies. Solidaridad is also a participatory programme. Ultimately it is the communities that are responsible for the control and execution of all projects."

Through TCDC channels, Mexican experts are assisting other countries in establishing programmes modelled on Solidari-



Mexico's President Salinas de Gortari is a strong advocate of South-South cooperation.



Agustín Sanchez (left) and Horacio Mondragón of the Department of Scientific and Technical Cooperation in Mexico's Secretariat for Foreign Affairs.

dad. Honduras, for example, has set up a Social Investment Fund very similar to Solidaridad. Nicaragua has just created its own Ministry for Social Action based on Mexico's SEDESOL. And in El Salvador Solidaridad field workers are helping to ensure the best possible transition from a war-torn society to one that can operate effectively in peacetime.

Countries interested in Solidaridad can send representatives to Mexico to attend annual workshops. The first, held in La Trinidad, Tlaxcala State, in June 1991, attracted 13 Latin American and Caribbean countries, including Haiti and Jamaica, and resulted in 56 agreements with Mexico for transfer of the Solidaridad methodology. Interest has come not only from Latin America but also from China, France, Spain, South Africa and some of the Central European countries in transition.

Energy: New Approaches to an Old Problem

Energy is another vital issue for developing countries, affecting nearly every aspect of life. In many Latin American countries, public power utilities are failing to meet demand. Power cuts of up to eight hours at a time are not uncommon, creating severe problems for both businesses and households.

Mexico's Institute for Electrical Research (IIE) is located at Palmira, near Cuernavaca, in the State of Morelos, two hours drive from the capital. An offshoot of the government's Federal Energy Commission (CFE), the IIE has developed strong links with fellow Latin American countries since its inception in 1975. Using the TCDC mechanism, the IIE holds training courses, sends out experts to oversee projects abroad and maintains a computerized database on virtually every aspect of energy production.



Installing a drainage system under Mexico's Solidaridad programme, initiated in 1988 to alleviate poverty and promote community welfare.

Geothermal energy, that is energy derived from volcanic heat, is an important power source in Mexico, which can take advantage of many volcanoes as well as the San Andreas fault line, running from California down through Central America. A world leader in geothermal energy, Mexico, through TCDC, has been helping other countries located on the San Andreas fault line to use this renewable energy resource. In this area, El Salvador has been a particular beneficiary of IIE expertise, with a geothermal station in Ahuachapán, another begun in 1988 in nearby Chipilapa, and three further planned for San Miguel, Coatepeque and Berlin.

The IIE also works on the development of alternative sources of energy, such as wind and solar power, biomass, micro-turbines and small hydro-electric stations. According to Ana Maria Martínez, who heads the non-conventional energy section, Mexico has a nationwide programme for encouraging small-scale electricity generation in rural areas, which includes the use of solar panels. As a result of a regional solar energy workshop held in Mexico last year, Costa Rica, with Mexico's help, has installed 2,000 small photo-electric lighting systems.

José Luis Rincon, head of IIE's International Technological Promotion Department, is particularly enthusiastic about what promises to be one of the region's most long-term and ambitious cooperation programmes: connecting up the entire continent with electrical power lines. Currently Honduras and El Salvador are being brought into a network that will join the US to Colombia and Venezuela in the south. In less than 10 years the current system of 230-volt lines will be raised to 500 volts, reducing transmission costs. "Since energy peaks vary so much from country to country, this electrical 'corridor' will both save energy and generate it far more efficiently," says Rincon.

Technology-based Enterprises

The IIE is far from being an ivory tower institute working entirely within the public sector. Guillermo Fernández de la Garza, former director of the Institute, was keen from the start to encourage greater communication with the private sector. For example, the IIE has developed computer software for teaching purposes, which is now being manufactured and marketed by the ICA company in Mexico.

In 1987 Fernández de la Garza began to promote the idea of setting up an industrial park in Cuernavaca,



Morelos. The first move was to create the Technological Innovation Business Centre (CEMIT), a business incubator whose aim is to nurture small and medium enterprises (TSME) by providing technological, administrative and financial advice, access to laboratories in the area and basic office infrastructure. CEMIT is favourably located, as the state of Morelos today boasts 21 institutes in areas such as biotechnology, water supply and computer software.

Lilia Arechevala Vargas, Director of CEMIT, points out that 44 companies have been established as direct spin-off from the project and notes that the incubator concept is spreading within Mexico. UNDP interest in promoting TCDC exchange in this area led to a workshop hosted by CEMIT in November 1991, which was attended by delegates from as far away as Ghana, Turkey and the Philippines. Fruitful discussions ranged from the impact of government policy on business enterprise to the difficulty of obtaining venture capital.

Ms. Arechevala noted that several CEMIT projects, such as Hidrotec's software program for

mapping urban water networks, would present good possibilities for transfer through TCDC.

Fernández de la Garza also founded the Centre for Technological Innovation (CIT) in the National Autonomous University (UNAM), Mexico's most prestigious higher education institution. The spacious CIT building, located on the vast campus, close to UNAM's science institutes, organizes international exchanges of expertise as well as training programmes in the management of technological innovation.

Revolutionary Cattle Feed

One of the remarkable innovations that CIT has assisted in transferring to other countries is a product known as Biofermel. The brain child of Dr. Perez Gavilán, it was developed over a period of 20 years in UNAM's Bio-Medical Institute. Biofermel is a cheap, nourishing cattle feed created from maize husks and other cultivated plant waste that has been partially digested by molasses laced with friendly bacteria. Apart from technical know-how, the manufacturing process requires a mill to grind

down the plant waste, fermentation tanks to cultivate the bacteria over a period of 48 hours, a further container for the 24-hour mixing process, and equipment to pack the final product into plastic sacks.

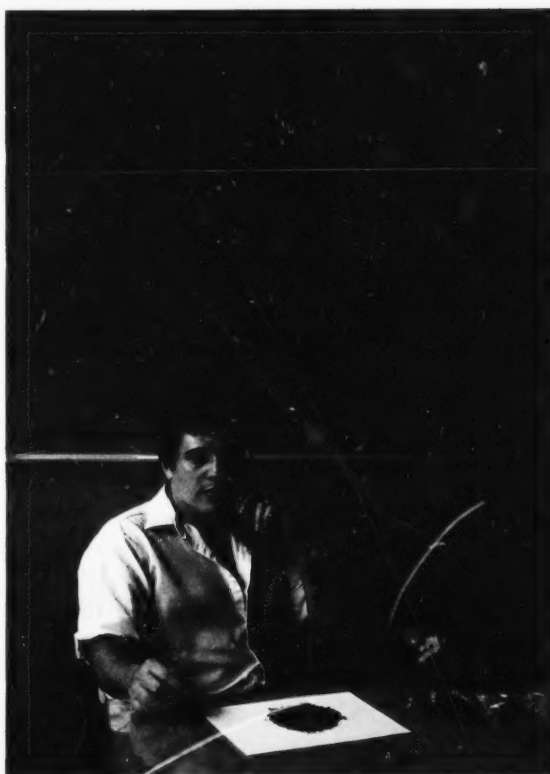
Each of the four plants currently active in Mexico produces annually around 15,000 tons of Biofermel. This has reduced the cost of feed for beef cattle by 26 per cent, and for dairy cows by 40 per cent (the product needs to be combined to a certain extent with more concentrated feed). "Apart from the mineral and protein content, the cattle love it," adds Jaime Medina, a scientist who is in charge of the project in the Bio-Medical Institute.

In 1986 the Institute cooperated with the Honduran government in setting up a plant. "In Honduras many cattle die of hunger because of the annual droughts and the high cost of imported cattle feed," says Mr. Medina. The new plant has been a major success, providing feed at a selling price of US\$70 a ton, which is even cheaper than the Mexican product, thanks to easy access to sugar cane for the molasses. Even if a country cannot easily obtain molasses, Mr. Medina



Opposite: A power plant simulator being used for training purposes at the Institute for Electrical Research, near Cuernavaca.

Above: Domestic solar power unit in Costa Rica, one of 2,000 installed in the country with Mexican assistance. **Right:** Jaime Medina of the Bio-Medical Institute in Mexico City, with a sample of Biofermel, a low-cost cattle feed developed at the Institute.



is confident that locally available substitutes could be identified through research.

Looking to the Future

With such an impressive record of achievement in TCDC, the Mexicans are understandably optimistic about the future. Horacio Mondragón, of the Secretariat for Foreign Affairs, is enthusiastic about TCDC's enormous potential. "Technical co-operation," he says "is helping us to understand each other's problems as well as to fulfil each other's needs." He notes that the recent democratization of the region has greatly improved the conditions for TCDC exchange.

Mr. Mondragón cites an exchange programme with Chile in the field of desert plants. Mexico's Commission for Desert Areas is interested in Chile's cultivation of water-storing plants, while Chile is experimenting with a species of Mexican nopal cactus as a forage plant. A trip to Eastern Europe last year resulted in agreements for technical cooperation projects with Bulgaria, Czechoslovakia, Hungary, Poland and Romania in areas such as privatization of state-owned industry, and poverty alleviation using Solidaridad methods.

In addition to its bilateral TCDC activities, Mexico is playing an active part in a number of regional initiatives. Currently one of the most exciting of these is the Bolivar Programme, designed to boost technological integration and innovation in Latin America and the Caribbean. Mexico is a founder member of the programme, which is named after Simon Bolivar, the 19th-century liberator who dreamed of a united Latin America. If Bolivar were alive today he would surely be pleased that TCDC is helping to bring that dream a little closer to reality. ■

For readers seeking further information, the following is a list of addresses for the programmes and institutions mentioned in the article.

Solidaridad

(José Luis Medina Aguiar,
Coordinator of International
Technical Cooperation)
Av. Insurgentes Sur 1480
Colonia Barrio Actipan, 03230
Mexico DF Mexico
Tel: (5) 534-7639
Fax: (5) 534-6583.

Institute for Electrical Research

Interior Internado Palmira
Palmira, Temixco, Morelos
64290 Mexico
Tel: (73) 183811.

CEMIT

40 Sur esquina 9 Este
CIVAC, 62500 Cuernavaca,
Morelos, Mexico
Tel: (73) 202122
Fax: (73) 203193.

Centre for Technological Innovation

(Victor M. Morales Lechuga,
Technical Secretary for Transfer
of Technology)
UNAM
Apartado postal 20-103, 01000
Mexico DF Mexico.

Biofermel Project

Institute of Biomedical Research
(Jaime Medina Gonzalez,
Director of Projects)
UNAM Ciudad Universitaria
04510 Mexico DF Mexico
Tel: (5) 550-5016.

Foreign Ministries in Transition

Andrés Castellanos reports on a recent workshop and TCDC consultation meeting to examine ways of strengthening foreign ministries of newly independent states. The author is TCDC Focal Point in the United Nations Department for Development Support and Management Services (UN/DDSMS)

Diplomacy in a changing world was the subject of a week-long TCDC workshop, held in Malta from 21 to 25 June 1993, for newly independent states wishing to upgrade the capacities of their foreign ministries at a time of rapidly shifting international conditions. The newly independent states and Baltic states represented were: Armenia, Azerbaijan, Croatia, Estonia, Georgia, Latvia, Lithuania, the former Yugoslav Republic of Macedonia, Moldova, Slovakia, Slovenia, Turkmenistan and Uzbekistan. Albania also participated. Other countries represented were Austria, Egypt, Hungary, Italy, Malta, the Russian Federation, Spain, Tunisia and Turkey. High-level participation underlined the importance given to this event and included the Vice President of Macedonia, several Foreign Ministers and Deputy Foreign Ministers, and various senior foreign ministry officials.

The gathering was hosted by the Government of Malta and supported by UN/DDSMS, UNDP's Special Unit for TCDC and the Regional Bureau for Europe and the CIS. The meeting also received support from the Mediterranean Academy for Diplomatic Studies, a joint Swiss-Maltese Institution. Also attending were representatives from UNESCO, the UN Institute for Training and Research, (UNITAR), UN Volunteers (UNVs), the European Bank for Reconstruction and Development, the Islamic Development Bank and the Vienna Diplomatic Academy.

As part of the preparations, UN/DDSMS and the Special Unit for TCDC joined forces in conducting a field assessment of the needs and capacities of the countries' foreign ministries, for which the services of experienced career diplomats, Leslie Agius and Alfred Bellizi from Malta and Metin Sirman from

Turkey, and a UN interregional adviser, Abdalla Zoubi, were used. As a result a report was prepared by Mr. Zoubi, to be taken up by the meeting together with another basic document on the state of the art in foreign ministry organization, prepared by Frederick Amato-Gauci,



Country representatives holding bilateral discussions on future cooperation. Above: Croatia (left) and Latvia. Right: Estonia (left) and Malta.

also an experienced diplomat from Malta.

The high-level opening session of the meeting was chaired by Professor Guido de Marco, Deputy Prime Minister and Minister of Foreign Affairs of Malta. In his opening statement, Professor de Marco emphasized the uniqueness of the gathering. He said that, while it could not produce a blueprint that would be applicable to all countries, it provided an opportunity to share ideas, offer recommendations and suggest how the international community could help countries strengthen their foreign ministries. He noted that "an effective foreign ministry should always be in transition", that is to say, it should have the flexibility to respond to changing circumstances and events.

Also on the podium at the opening session was Stoyan Ganev of Bulgaria, President of the United

Nations General Assembly. While recognizing that the newly independent countries faced many other pressing problems, he emphasized the importance of foreign relations "as an integral part of the democratic restructuring of society." His own country, he pointed out, did not have an independent foreign policy until the recent political changes. He said that the foreign services of the newly independent countries urgently needed assistance in training a new generation of diplomats with democratic ways of thinking.

During the session leading statements were



also heard from the foreign ministries of Albania, Hungary, Slovenia, Uzbekistan and Georgia, the Vice President and Foreign Minister of the former Yugoslav Republic of Macedonia, the Secretary General of Estonia's Foreign Ministry and the head of the Foreign Service Training Centre of Turkey.

There followed workshop discussions, chaired by UN/DDSMS and Malta, with the collaboration of Uzbekistan, Azerbaijan, Estonia, UNVs, UNITAR and the Mediterranean Academy, with Mr. Zoubi as adviser. The discussions lasted two



His Excellency Sadyk Safaev (right), Minister of Foreign Affairs of Uzbekistan, and his assistant Ziyadulla S. Pulatkmodzh at one of the plenary sessions.

and a half days and focused on three themes: (1) policy and organization; (2) personnel and training; (3) communications and office management. The participants agreed on the need for future assistance to the newly independent states in establishing appropriate legal and institutional frameworks for the effective functioning of foreign ministries, as well as in such areas as personnel management, training, information and communication.

Presentations were made by the Director of the Mediterranean Diplomatic Academy in Malta, Professor D. Kappler, and by the Director of the Vienna Diplomatic Academy, Alfred Missonig, on the activities of their institutions. A complementary exhibit on the uses of computerization for the work of foreign ministries was presented by Joran Kurbalija from the Mediterranean Academy.

The fourth day of the meeting was devoted to TCDC. It began with a general sensitization session, chaired by Kong Fannong, Director of UN/DDSMS, which included presentations by each participating international organization on its work in support of TCDC and an overview of the modality and its operation by Samuel Oglesby, Senior Training and Information Officer of the Special Unit for TCDC. This was followed by consultations and discussions among the participating countries, with a view to arranging mutual cooperation. Among the potential suppliers of assistance were Malta, Turkey, Tunisia, Estonia, Slovakia and Croatia, with the last three countries also doubling as recipients.

Some 50 TCDC activities were proposed for further discussion. Areas covered include policy analysis and planning, international law, the establishment of ministries of foreign affairs and missions, consular matters, international relations, training for young diplomats, prob-

lems relating to the status of citizens born abroad, and the management of foreign ministry archives and records.

Malta offered to host two one-week courses for approximately 19 foreign ministry officials of the newly independent states, as well as a full TCDC capacities and needs matching exercise. The possibility was also raised of a workshop on policy analysis and planning, organized jointly by Malta and Tunisia, in view of the fact that the latter has recently reorganized the policy and planning unit of its foreign ministry.

The three Baltic states — Estonia, Latvia and Lithuania — discussed possible sub-regional cooperation in technical assistance and training programmes for their foreign ministries. Similar discussions were held between Latvia, Moldova and Ukraine.

Croatia was one of the participating countries that came with both capacities to offer and needs to fulfil. The Croatian delegate said that the country would consider providing lecturers on international law, statistical methods and consular matters. At the same time, he said, Croatia would like to receive assistance on a TCDC basis in the areas of multilateral diplomacy, negotiation procedures, international trade and English language for diplomatic purposes.

At the closing session the following message was read from the United Nations Secretary-General, Boutros Boutros Ghali: "The United Nations itself, from the point of view of the diplomatic service, is a very special place. This Organization, which is often called a microcosm of the world, offers unique opportunities for a diplomat to develop professional skills and to quickly acquire experience in dealing with a wide range of different problems. I would suggest that every chance should

be used to allow young diplomats from the newly independent states to become acquainted with the United Nations."

As a follow-up to the meeting, a UNDP regional project is expected to be launched soon, in collaboration with other development organizations and UN agencies. This will focus on the main needs affecting the foreign ministries of the newly independent states and Baltic states, including the improvement of organizational structures, training, and information services.

This timely project will provide essential assistance to the newly independent countries in an area of vital importance to their national development. ■

"A tremendous challenge lies ahead ... If we fail at this historic opportunity our successors will not forgive us."

Geza Jeszensky
Foreign Minister of Hungary

"We would appreciate it if Ministries of Foreign Affairs could find possibilities to accept not only beginners but senior officials as well, and share experience with them in running their departments and sections."

Alexander Chikvaдзе
Foreign Minister of Georgia

Innovation with an Indian Flavour

From computer technology to small industry development, India has a wide range of advanced technical capacities for transfer through TCDC. Some of the most interesting are described here by Kiran Uday Singh.

The high level of expertise that India is making available to other developing nations can be judged by the advanced state of its computer and information technology. India's National Informatics Centre (NIC), based in New Delhi, was set up in 1977 to provide informatics services to the various ministries and departments of the Indian government. It has set up a satellite-based computer and communication network called NICNET, which links over 750 locations within the country including all central ministries, state capitals and districts, which are the basic administrative units in the country. Information on 27 sectors, including agriculture, animal husbandry, ground water, irrigation, forestry, health, industry and power, is collected at the district level and fed into the special software created by NIC. This District Information System of the NIC (known as DISNIC) is the first comprehensive network of its kind in the world. Y. K. Sharma, a senior technical director at NIC, believes that it will not be long before user terminals are set up in public places, through which information on any sector can be readily accessed.

The NIC has blossomed into a state-of-the-art information technology resource. Every year it runs over 150 courses and trains over 15,000 people, using sophisticated methodology and multi-media facilities. These include courses for other developing countries, funded by the Ministry of External Affairs, as part of NIC's effort to share its experiences and expertise through TCDC. For example, NIC offers a course, designed for working managers from developing countries, on setting up a computer centre. At the time of writing, 20 students are taking part in this course. Their



Participants in a diplomacy course at the Foreign Service Institute, New Delhi.

countries include Indonesia, Zimbabwe, Tanzania, Peru, Mozambique, Mongolia, Philippines, Trinidad and Tobago, Kyrgyzstan and the Sultanate of Oman.

Krishendath Kuarsingh, aged 51, of Trinidad and Tobago in the West Indies, is the oldest of the group. He is Executive Director of the National Information Systems Centre under the Prime Minister's Office. He says that, although there are many computer centres in his country, they operate largely independently. After going through this course he is expected to start an umbrella organization which will coordinate the work of all these smaller computer centres. At 24, Dhiyab Salem Al Habri of the Sultanate of Oman, is the youngest of the students. He works for the fledgling computer department in the Ministry of Civil Service. After coming across an NIC brochure in the ministry, he asked his boss if he could go on one of the courses and was given permission. He is optimistic about developing an efficient computer centre back home after finishing the course. Maria Elena Robosa is one of five students from the Philippines. She is an informa-

tion technology officer in charge of systems development in the Department of the Interior and Local Government. On completion of the course, she will help set up main-frame computer centres for the Government Communication Network, using the DISNIC programme as a model. George Mwita Kasisi, 31, is an administrative officer in Tanzania's Small-Scale Industries Development Organization. He was selected by his country's Ministry of Foreign Affairs and hopes that this training will give him the knowledge and confidence to set up a computer centre for coordinating the activities of the small-scale industry sector in Tanzania.

Three Decades of TCDC

The NIC courses are only one part of India's TCDC effort, which dates back to 1964 when the Indian Technical and Economic Cooperation (ITEC) programme was launched by the Ministry of External Affairs. Fully funded by



Tanzanian President Ali Hassan Mwinyi (centre) visiting the National Small Industries Corporation, New Delhi, accompanied by J.S. Juneja, the Corporation's Chairman (left).

the Government of India on a grant basis, the ITEC programme is administered by the Economic Division of the Ministry and provides an effective framework for technical and economic exchanges between India and other partner countries. The emphasis is on the development of human resources and the building up of infrastructural facilities. India is in many ways a meeting point between East and West, and has evolved its own approach to the challenges of development. It has a broad and well-developed industrial base and a large pool of technical and scientific manpower. Through the ITEC programme, India desires to foster closer relationships with other developing nations by offering them its knowledge, experience and expertise. The three major areas where this cooperation is available on an ongoing basis are: (1) direct training; (2) sending of Indian experts abroad; (3) project assistance and consultancy services.

Training Future Diplomats

Under the ITEC programme, there are over 800 training slots available every year, covering many disciplines. For example, in view of rapidly changing international political conditions, there is a great demand for the courses in diplomacy offered by the Foreign Service Institute (FSI). The FSI was created in 1986. Its basic aim was to train foreign service personnel, although it also offered "Indian orientation" classes for foreign diplomats. In addition, on a TCDC basis, it took students from developing countries who could attend selected segments of the regular course that might be useful to them. In 1988-89 two representatives from Mauritius attended the full three-month course, and word of its usefulness quickly went round, leading to a flood of demand.

A. K. Banerjee, a joint secretary in the FSI and associated with its training programme for the past two years, speaks with an almost missionary fervour and proprietary pride about the success of the Institute's training courses. "After Mauritius, we had two

trainees each from Bhutan and Zambia, followed by others from Botswana, Maldives and Viet Nam. Today, the trickle is turning into a torrent, and our next course is already booked."

A source of great pride for the Institute has been the recent passing out of 15 future envoys of the African National Congress (ANC). These envoys attended the three-month course following a personal request from the President of the ANC, Nelson Mandela. "The course has been quite comprehensive and of great value to us," says Mr. Edward Makhasi, ANC envoy to Kenya. Along with the ANC batch, there were aspiring envoys from Zimbabwe, Zambia, Hungary, Romania, Uzbekistan, Kazakhstan, Kyrgyzstan, Turkmenistan and Viet Nam.

The 90-day course began with a week in Bangalore at the Indian Institute of Management where participants attended classes on management techniques, negotiation and communications. Back in New Delhi, they tackled the nuts and bolts of diplomacy, including protocol, economic diplomacy, the running of a mission abroad, diplo-

matic privileges and immunities, United Nations and multilateral diplomacy, formulating foreign policy, media relations, drafting of communiqués, handling VIP security, human rights, and crisis management. The training course is interspersed with conducted tours to places of historic and cultural interest.

Training courses at the FSI are funded partly by the Ministry of External Affairs and partly by the ITEC programme. The success of the courses has prompted the Ministry to widen FSI's operations, necessitating new premises in New Delhi, whose construction is due to begin soon.

Assisting Small Industries

Another institution providing yeoman service for South-South cooperation is the National Small Industries Corporation (NSIC), which was set up in 1955 to support the promotion and development of small-scale industrial enterprises. The NSIC can do anything from setting up a plant to providing expert advice on purchase and leasing of machinery, prototype development, raw materials, quality control, market research and numerous other aspects of running a small business. Putting its experience in India to good effect, it runs training programmes for foreign participants and has helped in setting up more than 250 industrial projects in countries like Afghanistan, Ghana, Iran, Iraq, Kenya, Libya, Malawi, Mauritius, Mozambique, Nigeria, Nepal, Peru, Sierra Leone, Sri Lanka, Tanzania, Thailand, West Indies and Zambia.

During his visit to India in May, the President of the United Republic of Tanzania, His Excellency Ali Hassan Mwinyi, made a point of

visiting the NSIC facilities in New Delhi and evinced keen interest in the services it offers. J. S. Juneja, Chairman of the NSIC, spoke of the special ties between Tanzania and India. He pointed out that the NSIC holds regular technological exhibitions where delegations of various developing countries can choose the technologies relevant to their countries' needs. The NSIC also has close links with various international organizations, such as UNDP. In order to enable other countries to establish similar institutions of their own, NSIC is now organizing courses for national trainers and service personnel. Similarly, it has set up common facilities centres so that all back-up services and spare parts are available within the country.

These are only a few of the areas in which India provides technical assistance through TCDC. The full list includes everything from sericulture to telecommunications and from banking to meteorology. To ensure that the TCDC programme continues to work effectively, the Ministry of External Affairs recently called for a review of the programme. As Pripuran Singh Haer, a Joint Secretary in the Ministry says: "After a vibrant three decades of TCDC activity, we need to take a look at its functioning and see the new areas where it can be extended." A committee of former ambassadors has already conducted the review, and their report is being studied.

"We have to prepare for the coming century and the changes it will necessitate," says former diplomat K.L. Dalal. He anticipates more TCDC projects involving private enterprise, such as the successful collaboration between the Tata company, an industrial giant of India, and the Thailand Textile Mill. Another example is the management of tea plantations in Mauri-

tius by Indian experts from the private sector.

One of the most interesting ideas mentioned by Mr. Dalal is to recruit TCDC consultants from among Indians living in other developing countries. Many of these Non-Resident Indians (NRIs) are highly qualified technical experts, and they would have the advantage of being already on the spot and knowing the local language and conditions. They could therefore be a very useful option for TCDC projects, especially as Indian experts are sometimes reluctant to leave their families to go abroad on foreign assignments.

Mr. Dalal also believes that it is important for India to coordinate with countries able to offer a similar level of technical assistance, such as South Korea, Singapore, Egypt, Mexico, Brazil, China, and Argentina. Pooling their resources for training and other assistance would enable these countries to reduce the cost of their TCDC programmes.

Over the next three to four years, India is expected to increase its TCDC programme by 15 per cent, building on its impressive record over the past three decades and preparing to take TCDC into the 21st century. ■

Steering TCDC towards the New Millennium

The eighth session of the High-Level Committee on the Review of TCDC took place in May at the United Nations, New York. Christopher McIntosh reports.

The High-Level Committee (HLC), which meets every two years, reviews progress towards achieving the goals of the Buenos Aires Plan of Action, the blueprint for TCDC adopted by the United Nations Conference on Technical Cooperation among Developing Countries, held in the Argentine capital in 1978. This year 114 member states of the United Nations were represented at the session. In addition, a number of other organizations participated in the discussions or attended as observers. These included various bodies of the United Nations system as well as inter-governmental and non-governmental organizations.

The session was opened by His Excellency Eduard Kukan, Permanent Representative of the Slovak Republic to the UN and President of the previous session. His Excellency Ramiro Piriz-Ballon, Permanent Representative of Uruguay to the UN, was elected President of this year's session.

Following the election of other officers for the session, Luis Maria Gomez, Associate Administrator of the United Nations Development Programme (UNDP), addressed the meeting. Mr. Gomez spoke of the increased priority attached to TCDC, as manifested by various initiatives and decisions taken during 1991-92, such as the important 1992 decision by the Economic and Social Council of the United Nations, calling on all partners in the development effort to give "first consideration to the use of TCDC."

Following the Associate Administrator's speech, the meeting was addressed by the Director of the Special Unit for TCDC, Abebe Ambatchew. Drawing attention to the latest progress report on the implementation of TCDC, he mentioned that the quantity and quality of information in the report had been enhanced by improving and simplifying the questionnaires sent

out to countries and to UN system organizations. He also introduced another important document that had been submitted to the delegates: "Report on the development of a strategy for the promotion and application of TCDC in technical cooperation programmes and the activities of the UN system in the 1990s." This he described as a synthesis of views gathered from many sources, such as meetings of national TCDC focal points, an expert group which met in Morocco early this year, and evaluations by the Special Unit. The recommendations of the report, he said, included the formulation of clearer national policies on TCDC, the strengthening of national focal points, the creation of better information bases and the decentralization of some functions to the national level.

The general debate opened with a statement from the Colombian delegate, Douglas Botero-Boshell, on behalf of the Group of 77. He spoke of the need to examine the financing of TCDC activities in the UN system, as the funds allocated to it were modest in relation to many other UN activities.

In the debate that followed, there was general agreement that, while there has been a significant increase in TCDC activity, much remains to be done if TCDC is to achieve its full potential. One of the themes raised by many delegations was the continuing challenge of finding financial support for TCDC exchanges. While recognizing that the main responsibility for implementing TCDC lies with the developing countries, numerous delegates pointed out the financial constraints that exist in those countries and said that TCDC activities deserve full support from developed countries and international financial institutions. A number of the delegates from developed countries acknowledged that their nations had a supporting role to play in TCDC.

There was general agreement that the information given in the Administrator's progress report showed a significant increase in TCDC activities. The delegations reaffirmed their continuing support for the Buenos Aires Plan of Action, and many expressed appreciation for the work of the Special Unit for TCDC and urged that the Unit be strengthened.

When the debate turned to more specific matters, a number of significant points were raised. Among other things, delegates urged greater involvement of the private sector, better integration of women in TCDC activities, a greater emphasis on environmental activities in TCDC programmes, and an increase in procurement by the UN system from developing countries.

After the main deliberations, from 25 to 28 May, the HLC reconvened on 4 June to adopt its report containing the formal decisions of the session. Among its salient decisions, the HLC welcomed the TCDC strategy for the 1990s and called upon all parties to give priority to its implementation. In another decision, the Committee requested developing countries and organizations of the United Nations system "expeditiously to take measures to strengthen their focal points for TCDC." In addition, all parties were encouraged to consider "regional and sub-regional mechanisms, including regional programmes, as suitable means to support individual countries in the implementation of the strategy." The Committee also recognized the potential for TCDC between developing countries and economies in transition. Donor countries were invited to assist TCDC through trilateral arrangements, and all countries were called upon to increase the level of their support generally. ■

Pakistan's Flight Plan for the Future

In the field of civil air transport, many developing countries are turning to Pakistan for assistance. Mohammed Hanif reports.



Pakistan International Airlines (PIA) has come a long way since it started its operations in 1955 with 15 piston-engine aircraft and little aviation know-how. Over the past four decades it has fathered two new airlines and provided technical assistance and training to 40 airlines of the developing world. The personnel it has trained include 699 pilots and flight engineers, 1,678 ground engineers and 1,665 employees in other areas including in-flight services.

In view of these achievements, it was appropriate that Pakistan played host to a TCDC capacities and needs matching exercise in this field, held in Karachi from 29 November to 3 December last year with support from the Special Unit for TCDC of the United Nations Development Programme (UNDP). A total of 27 developing countries, including Pakistan, participated in the negotiations, at which 255 bilateral TCDC activities were agreed upon. PIA acted as the coordinating authority.

"PIA's corporate policy is to provide the kind of assistance that will help other airlines become self-sufficient," says Mahmood Khan, PIA's general manager for legal affairs. "We don't want to create long-term dependence, and we don't have any political designs on the countries we are cooperating with. PIA itself benefits from these projects, as our personnel gain valuable international exposure, and we create goodwill for our country."

Besides training thousands of aviation staff from other developing countries, Pakistan has helped to set up two airlines from scratch: Air Malta and Emirates Airline. In the early 1970s the Government of Malta realized that, with its tourist-oriented economy, the country needed an airline of its own. It approached 10 airlines for assistance, mostly from the developed countries, but including some from the developing world. The proposal submitted by PIA was accepted, and the contract was signed in

March 1973, despite some opposition on the grounds that this was the first time an Asian airline company had been asked to set up an airline in a European country. PIA appointed a team of five executives, one to act as a general manager and the other four to look after, respectively, marketing, ground operations, flight operations and finance. The team arrived in Malta in June 1973. Realizing that Malta was a country with limited resources, they eschewed massive investment and began with an initial capital of 750,000 Maltese pounds, which was later increased to 1,250,000. Eighty per cent of the equity was put up by the Government of Malta, and the remaining 20 per cent was provided by PIA itself. PIA also leased two aircraft to Air Malta, and maintenance services were contracted out to PIA at very competitive rates. The training of Maltese nationals began right away in Pakistan, but was later shifted to Malta. Within the first five years PIA trained 12 pilots, 5 flight engineers, 15 maintenance engineers, 37 mechanics and about 200 cabin staff.

PIA's management team, drawing on Pakistan's experience, designed the operations of the new airline to be cost-effective and to provide good-quality cabin service in order to compete with the established airlines in the region. The policy paid off. On the London route, which was then the toughest to penetrate, Air Malta's share of scheduled traffic reached 40 per cent after the first year of operations. This increased to 45 per cent in the second year. At the end of the five-year contract with PIA, Air Malta bought the two planes it had leased from the Pakistanis. Since then, Air Malta has never looked back.

United Arab Emirates is another country that PIA has assisted in launching its own airline. PIA was



Opposite: Pilots being trained in a cockpit simulator at the training centre run by Pakistan International Airlines. **Above:** Emergency training for PIA cabin crew. **Right:** A maintenance facility of Air Malta, one of the airlines launched with assistance from PIA.

given the contract in 1985 and leased two aircraft to the new venture. Unlike Malta, the Emirates provided their own management and required no capital input from PIA. Initially the fleet was manned by PIA crews, while PIA trained the Emirates crew. Within three years the running of the airline was handed over entirely to the Emirates government. Today Emirates Airline, with 15 aircraft, is building a solid international reputation and is one of the fastest-growing airlines in the region.

These examples illustrate PIA's valuable contribution to South-South cooperation. For a developing country seeking to build up its capacity in civil aviation, there are distinct advantages in seeking as-



Ethiopian Airlines: Setting the Pace in Africa

Pakistan is not the only developing country offering expertise in civil air transport. Another example is Ethiopia, which possesses one of the most advanced airlines in the developing world. Appropriately, the Ethiopian capital, Addis Ababa, was the venue for a TCDC workshop on air transport in Africa, held in September 1992 with support from UNDP's Special Unit for TCDC and the Regional Bureau for Africa and attended by representatives of 23 Sub-Saharan African states and their airlines.

Air transport in Africa is currently facing a variety of problems including deteriorating airports, ageing fleets, out-of-date aviation legislation, inadequate training, excessive government interference, lack of cooperation between countries, and a proliferation of small airlines, making it difficult to implement economies of scale. In response to these problems, representatives from a group of African countries came together at Yamoussoukro, Côte d'Ivoire, in 1988. The resulting Yamoussoukro Declaration established a mechanism for cooperation in the field of aviation, which has already led to increased communication and a number of joint ventures. African countries, however, recognize that much remains to be done if the region is to create a viable air transport industry.

The Addis Ababa workshop was a valuable opportunity for African countries to discuss each others problems in the field of aviation and to learn from Ethiopia's successful example. In a case study on Ethiopian Airlines, a number of factors were identified as contributing to the success of the company, such as lack of government interference, continuous training and re-training of staff at all levels, flexibility to changes in market conditions, and diversification of activities into such areas as cargo operations and provision of maintenance and training services for other airlines.

The workshop made a series of recommendations designed to promote improvements in the region's air transport industry. Governments were recommended to upgrade aeronautical services, refrain from excessive interference, update aviation legislation and work with other governments towards a coordinated airspace policy. Airlines were urged to avoid duplication of operations and wasteful competition and to cooperate in cost-cutting measures, such as the pooling of training and maintenance facilities.

Further meetings are being planned to further the implementation of these recommendations.

sistance from a country such as Pakistan. Whereas a week's training with a European or North American airline costs between US\$750 and \$1,200, PIA can provide training of comparable quality for \$250 to \$300. In addition, PIA is able to provide assistance that is more relevant to developing country conditions. In civil aviation developing countries face a different set of problems — for example in acquiring skilled manpower — from those faced by developed countries. Developing country airlines also require a different style of management.

PIA's Civil Aviation Training Institute, founded 25 years ago with support from the United Nations Development Programme, is considered one of the best in the world. Situated near Karachi's

Quaid-e-Azam Airport, it is a comprehensive training facility whose courses are regulated by Pakistan's Civil Aviation Authority and are internationally recognized. Areas covered in the training include air traffic control, aeronautical communications, radar technology, airport management and fire prevention. Courses are normally conducted in English, which is the international language of aviation.

In addition to its intake from within Pakistan, the Institute accepts many trainees from other developing countries. One of PIA's regular international training programmes is carried out with financial support from the Japan International Cooperation Agency. Each year under this programme short courses are provided for 15 aviation professionals from neighbouring countries such as Nepal, Bangladesh and India. PIA is eager

to extend its training facilities to more developing countries, such as the newly independent states of Central Asia.

By assisting other developing countries in making their airlines efficient and viable, Pakistan is providing a service that will have a profound impact on the future of the South. ■

Further information on civil aviation training courses in Pakistan can be obtained from:

The Deputy Director, Training
Civil Aviation Training Institute
P.O.Box 504, Hyderabad
Pakistan
Tel: (92) 221-81181
Fax: (92) 221-81254.

A Cast-Iron Case for TCDC

Christopher McIntosh reports on Turkey's capacity in foundry technology, which it is sharing with other developing countries.

Foundry products are essential to any modern society. They cover an enormous range, from simple objects such as pipes and gutters to complicated engine components. Look under the hood of a car, for example, and you will see numerous parts that were made by the foundry process, that is to say, essentially by pouring liquid metal into a mould or a die.

Developing countries use foundry products in many important ways. In the food and agriculture sector, for instance, metal castings form key components of ploughs, tractors, water pumps, threshers, presses and countless other types of equipment. Machine tools (lathes and other devices for shaping metal) are also vitally important for developing countries, and these too are largely built with metal castings. Without foundries to turn out such components, a country is at a severe disadvantage.

In developed countries, foundries are highly capital-intensive operations, often using very sophisticated equipment. For many developing countries, on the other hand, especially those in the least developed category, foundries of this kind are inappropriate. In these countries, the need for cast metal components can more appropriately be met by small or medium-scale foundries, using more basic equipment. Consequently, when such countries are seeking foreign assistance in developing their foundry industries, they often prefer to turn to another developing country with appropriate experience in the foundry sector and high technical capacities.

An example of such a country is Turkey, whose well established foundry industry ranges from large and ultra-sophisticated plants to small and relatively simple ones. The country is therefore well-placed to supply foundry expertise and training to developing countries.

Since 1979 the Marmara Research Centre (MRC) at Gebze in Turkey has been running 8-week courses in small-scale foundry work for participants from least developed countries, in collaboration with the United Nations Industrial Development Organization (UNIDO). These courses form part of UNIDO's in-plant group training programmes, designed to furnish participants with intensive practical experience in a relatively short time. The Turkish government pays up to 80 per cent of the expenses for each participant, including training, board and lodging and a proportion of the travel costs. The remainder is covered by UNIDO. The sending government covers only the costs prior to departure, such as internal travel. Countries that have sent participants over the past 15 years include Bangladesh, Botswana, Ethiopia, Gambia, Ghana, Kenya, Malawi, Mauritius, Nepal, Senegal, Sudan, Tanzania, Zambia and Zimbabwe. The MRC also accepts individual trainees on a fee-paying basis.

"The trainees who come to us are engineers and technicians directly involved in the casting process," explains Haydar Karagoz, Training Director at the MRC.

The training at MRC is a mixture of classroom lectures, hands-on work experience and visits to Turkish foundries. One of the important subjects covered is the technique of melting and casting. For melting the metal, small-scale foundries in developing countries normally use furnaces heated by coke or oil, rather than the electric furnaces used in most modern foundries in the North. Here temperature is a critical factor. If the metal is too cold it will not flow correctly into the contours of the mould. If it is too hot it may burn as it touches the mould and create imperfections in the cast. The composition of the mould is also important. Normally moulds are made of sand mixed

with a binding substance such as clay.

The trainees also study the properties of different metals and alloys. Cast-iron, for example, is a versatile material which absorbs noise and vibration and is therefore good for certain types of heavy machinery. Aluminium has the advantage of lightness. Copper-based alloys such as brass and bronze are corrosion-resistant.

Visits to Turkish foundries are another important part of the course. "Our trainees very much appreciate these visits," says Mr. Karagoz, "because they see things that they can take home and apply."

In addition to organizing training courses, MRC can also provide advice in setting up foundries. Currently MRC experts are assisting Gambia in establishing a foundry industry from scratch. The first plant will be built at Kanifing near Banjul and will be attached to a technical training institute. It will be used both for actual production of castings and for demonstration and training purposes.

Sometimes former trainees return home and set up their own foundry businesses. Ghana, Mauritius, Nepal and Sudan are among the countries that have spawned new foundry plants in this way. Whether or not they intend to establish their own plants, all trainees who come to the MRC return to their countries with greatly enhanced expertise in foundry technology and therefore able to play their part in developing one of the South's key industries. ■

Information about the MRC courses can be obtained from:

Mr. A. Haydar Karagoz,
Training Director
Marmara Research Centre
P.K. 21
41470 Gebze-Kocaeli, Turkey
Tel. (90-19) 412300
Fax. (90-19) 412309.

Urban Development: Indonesia Meets the Challenge

Indonesian methods of urban planning and development are being studied with increasing attention by other countries facing similar problems of urban growth. This report is by Karin Johnson.

The continuing trend of mass migration to urban centres is a matter of great concern to planners in all regions of the developing world. Wherever it occurs it brings similar problems. Population influxes bring housing shortages, overcrowding and the growth of shanty towns, increasing pressures on urban services such as transportation, hospitals, water supplies and waste disposal. It becomes harder to secure a place in an educational institution or to find a job, and this in turn leads to the swelling of the so-called informal sector, with large numbers of street hawkers setting up along the main thoroughfares, adding to transportation problems. In addition, there is the sensitive issue of land rights, for the land occupied by the new urban dwellers is likely, sooner or later, to become an issue in development planning or real estate investment, particularly in countries experiencing rapid economic growth. Although the details may differ from country to country, this scenario is a familiar one to many developing countries.

One country that is addressing these problems with great determination is Indonesia, where planners have devised a methodology of urban development that holds important lessons for the rest of the developing world. In 1992-93 Indonesia's Coordinating Committee for International Technical Cooperation (CCITC) organized 23 training programmes to demonstrate what Indonesian planners call the "self-propelling growth scheme," for urban development. The key to the success of this method lies in the active involvement of all levels of the community in every aspect of a development scheme, including planning, financing and maintenance. Encouraged by the success of the 1992-93 training programme, the Indonesians are planning courses for approximately 600 par-

ticipants for 1993-94. The Indonesian government provides the training free of charge and pays living expenses and internal travel for the participants. International travel for some of participants is provided out of the country's UNDP IPF (Indicative Planning Figure) allocation, as part of its TCDC umbrella project. The programme has aroused particular interest among member countries of the Non-Aligned Movement, which is being chaired by Indonesia for the period 1992-95.



A striking example of Indonesia's imaginative approach to urban development: the Citra Niaga market in Samarinda, East Kalimantan.

Two integrated urban development projects are currently being showcased by the CCITC as successful examples of the self-propelling growth scheme: the Citra Niaga Commercial Center in Samarinda, provincial capital of East Kalimantan, winner of the 1989 Aga Khan Award for Architecture; and the Kampung Improvement Project in Surabaya, East Java, one of whose kampungs won the Aga Khan Award for Architecture in 1986 (the word kampung means, roughly, a rural or urban neighbourhood with its own community structure). In February of this year both of these schemes were the

focus of training programmes for urban planners, policy-makers and sociologists from other developing countries.

The Citra Niaga market place had previously been an "entertainment park," filled with sidewalk traders and food sellers known as *kaki lima* (meaning "five feet" — that is, the two feet of the trader plus the three feet supporting the food cart). These operated without much consideration to sanitation or the flow of traffic. The place was dirty, smelly and prone to fire — in fact it had twice burned to the ground. After the second fire, the governor of East Kalimantan at that time, H. Soewandi, decided to include the 2.7-hectare site in his renovation plans for the city of Samarinda. His aim was to create a place where rich and poor could coexist. What he wanted to avoid was an exclusive shopping centre catering only to the wealthy. Most importantly, Soewandi insisted that the renovation plan for the new market (and later housing development) should involve the original traders and *kaki lima* in its development and financing.

The financing of the project was the trickiest and most innovative part, as no outside funding and no local or central government money was used. The point was to be self-supporting. Basically, the Citra Niaga scheme worked like this: local government donated the land for the Citra Niaga market to a developer who, in turn, had to guarantee bank loans to the small traders, enabling them to set up outlets in the new market. The more prosperous business people guaranteed their own loans. In addition, a cooperative was formed, consisting of all the Citra Niaga traders, in which the financially stronger members supported the weaker. The cooperative is also partly responsible for market maintenance. So successful has the co-



Planned with the participation of local traders, the Citra Niaga market was opened in 1989.

operative been that it later went on to finance successfully a housing estate for its members.

In 1989 the mayor of Samarinda opened the Citra Niaga market, officially signalling the start of business for the owners of the 141 shops, 79 kiosks and 224 stalls. And in February of this year the first Citra Niaga training programme was held in Samarinda for 14 urban planners and policy-makers from other developing countries, including Malaysia, Pakistan, India, Senegal, Turkey, Viet Nam, Cambodia, Brazil, Nigeria, and Egypt.

For 10 days the participants listened to papers from local government officials, the developer and the Institute of Development Studies (an NGO involved in the scheme). The participants presented case studies from their own countries and discussed whether conditions there were suitable for similar projects. They visited the Citra Niaga site to talk with traders and were continually impressed at the cooperative attitude of all concerned and the smooth functioning of the project. At the end of the course they reported having received new and valuable information for use in their own countries. Although some were doubtful that the property laws in their own countries would allow for such an integrated scheme, the innovative financing and cooperative spirit of the project greatly impressed them.

The same community-centred philosophy contributed to the success of the Kampung Improvement Project (KIP) in 700-year-old Surabaya, the second largest city in Indonesia after the capital Jakarta. Begun in 1969 and still operating today, KIP has provided improvements in physical facilities and infrastructure for 70 per cent of the existing kampungs, an area covering over 3,000 hectares. Kampungs comprise seven per cent of the

land area of Surabaya and contain 63 per cent of its population.

Kampung residents are generally in the lower income categories and work in the informal sector, although lower middle class kampungs also exist. Traditionally, they have received little government financial support for their housing, which sometimes consists of nothing more than a cardboard box. Where land is scarce and demand high, densities in kampung areas sometimes reach 1,000 inhabitants per hectare. In such situations, sanitation and other public services are dangerously stretched.

KIP began in earnest during Indonesia's first Five-Year Plan, when funds were scarce and the New Order government's economic policy was still finding its feet. However, poor sanitation and the spread of disease reached such proportions that central and local governments were spurred to do something, albeit with limited resources. In 1974 the World Bank stepped in and gave the programme a big boost, but locally-raised funds from cooperatives have contributed up to 50 per cent of the necessary resources. From the project's inception up to 1990 US\$13.5 million has been provided by the communities themselves, while \$26.5 million has come from the central and local governments.

Three distinct types of kampung improvement project were implemented. The People Self-Help Projects relied almost entirely on the community members themselves for planning, fund-raising and implementation, with the government merely providing guidelines and standards. The W.R. Soepratman Projects focused on community self-help in the building of access roads, drains, toilets and washing areas, using materials provided by government. Urban

KIP has been the broadest in scope, reaching the lowest-income communities and providing housing renovations, water supply networks, standpipes, sanitary facilities, solid waste management facilities, elementary schools and public health centres. This last programme was funded by World Bank loans channelled through the provincial government. The communities themselves donated land (where access roads and footpaths required the setting back of existing housing), labour, and time; they also maintain their new facilities.

In February the KIP Surabaya programme was used for the first time as a training model for participants from 12 developing countries. The 10-day training programme was similar to the Citra Niaga programme. Participants attended seminars offered by KIP organizers, held discussions and visited various kampungs to see living conditions for themselves and to speak with residents. As in the case of Citra Niaga, participants returned to their home countries impressed by what they had seen and learnt.

While it is clear that Indonesia's approach to urban development cannot always be exported to other countries without modification, the Indonesian experience in this area holds out hope that the problems facing the cities of the developing world are not insoluble. ■

Rural Energy: Studying the Indian Approach

Representatives of 14 developing countries took part in the first-ever international workshop on integrated rural energy, held in New Delhi, India, in April.

Scarcity of energy in rural areas is a problem common to many countries of the developing world. Compared with urban areas, rural communities tend to be relatively poorly supplied with commercial forms of energy, such as electricity, and often have to turn to non-commercial sources such as firewood and agricultural waste. These are usually inefficiently used, with results detrimental to the environment.

India's response to this problem has been to create a pioneering Integrated Rural Energy Programme (IREP) to revitalize the rural economy and help rural communities meet their energy needs in a sustainable way. The programme, run by the Planning Commission of the Indian government, integrates commercial energy sources with non-conventional ones such as biogas and solar power. It also develops financing mechanisms to enable communities to buy energy. Rural people are encouraged to participate fully in the planning of the programme at the local level, through community organizations. This programme has been highly successful and has created great interest among other developing countries sharing similar rural energy problems.

The international workshop was held at the national headquarters of the programme, the Mahatma Gandhi Institute of Integrated Rural Energy Planning and Development, a training and research centre located at Bakoli, on the outskirts of New Delhi. Appropriately, the Institute's architecture is designed for maximum energy efficiency and makes full use of solar power. Facilities include research laboratories, a computer centre, a comprehensive library and an "energy park" demonstrating many ways of using solar energy, wind

power and biogas. All who come to train at the Institute are given classes in yoga, to teach them how to harness energy at the most basic level — in the human body.

There were over 60 participants at the workshop, and the countries represented included Brazil, Colombia, Egypt, Ghana, Republic of Korea, Mexico, Nepal, Nigeria, Philippines, Sri Lanka and Tanzania. The workshop was sponsored by India's Planning Commission and the Special Unit for TCDC of the United Nations Development Programme. The Special Unit was represented by the Director, Abebe Ambatchew.

The workshop was inaugurated by K.R. Narayan, Vice-President of India. Other high-level Indian officials present at the opening included Giridar Gomango, Minister of State for Planning; Pranab Mukherjee, Deputy Chairman of the Planning Commission, P.K. Dawe, Lieutenant Governor of Delhi; R.K. Thakur, Chief Secretary of the Delhi Administration; and S.K. Chopra, Adviser to the Planning Commission.

The main purpose of the event was to enable participants to learn how to formulate an integrated rural energy programme, drawing on India's experience. At the same time, participants took the opportunity to compare the experience of their respective countries in the rural energy sector and to discuss possible collaboration.

The early sessions included presentations on the Indian programme as well as papers by representatives from other developing countries. Turning to specific areas, participants discussed the relevance of energy policy in relation to employment, the environment, infrastructure, agriculture and rural women. Part of the workshop was devoted to group discussions.

A separate group discussion was devoted to Technical Cooperation

among Developing Countries (TCDC). UNDP officials, along with country representatives, discussed the possible scope and applications of TCDC in the rural energy sector.

Field visits were organized to an electricity generating station, a biogas plant, a sewage plant and one of the communities participating in the Integrated Rural Energy Programme.

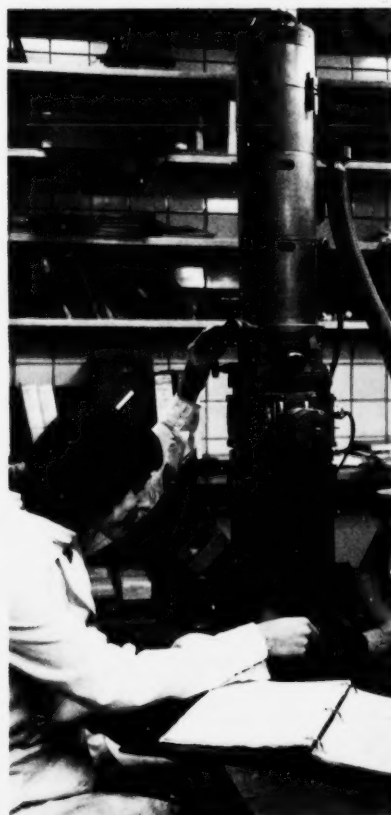
At the end of the workshop a joint communiqué was issued, entitled the *Bakoli Declaration on Rural Energy*. This emphasized the commonality between developing countries in their rural energy problems and said that planning in this sector should be a major component of national policy. The document went on to state that "the rural energy problem needs to be tackled through an integrated approach which reconciles the concerns of energy, employment, environment and, above all, equity. In order to achieve this objective, integrated rural energy programmes should be set up in the developing countries, drawing from the Indian experience." ■

Further information on India's Integrated Rural Energy Programme can be obtained from:

The Mahatma Gandhi Institute of Integrated Rural Energy Planning and Development

Bakoli, Delhi 110036
India
Tel: (11) 720-2690.

News and Perspectives



Laboratories at the University of Buenos Aires for pharmacology (top) and engineering (bottom).

Researchers and Entrepreneurs: Building a Fruitful Partnership

One of the keys to successful economic development lies in achieving a symbiosis between academic research and the world of industry, whereby technology and expertise flow constantly from one to the other. The benefits of this are shown clearly by the example of the fast-track nations of Asia — such as South Korea, Malaysia and Japan — where the astonishing growth rates of recent decades have been achieved partly through a deliberate policy of encouraging just such a partnership between academe and industry.

In Latin America, however, this relationship needs further development in order to become a solid and permanent link, capable of yielding continuous results. To address this problem, and to find ways of improving the relationship in the light of the current highly competitive international economic climate, a workshop was held in Buenos Aires in March with the support of the Special Unit for TCDC of the United Nations Development Programme (UNDP) as well as the United Nations Conference on Trade and Development (UNCTAD). Some 50 people participated. They included

members of the scientific and business communities of various Latin American countries, as well as representatives of regional and international development organizations. There were also a number of participants from Europe and Asia, who brought a different regional perspective to the discussions.

Close attention was paid to the remarks of Limsu Kim of the University of Korea, currently Visiting Professor of Management at the East Asian Institute of Columbia University, New York City, USA. Prof. Kim emphasized that, if governments are to prepare themselves for the future they must help to create a framework in which scientific and technological research can feed industrial development. The South Korean experience, he said, confirms that this can only be achieved if universities are seen not just as training institutions but as research centres of excellence. In this way "firms can be supplied with specialists of high quality and expert knowledge." He pointed out that in 1971 South Korea had only one centre for research and development, whereas now there are 1,200 such centres. This, he said, is one of the factors that account for the country's economic achievements.

Speaking from a very different national perspective, the Cuban participant, Osmara Ortiz, of the Centre for Metallurgical Research in Havana, said that the close relationship between the universities and industry was the essential factor enabling her country to contend with its current economic difficulties. Describing some of the results of this cooperation, she spoke about Cuba's achievements in the reconditioning of industrial spare parts, the development of technologies to reduce significantly the costs of repair and maintenance. She said that the methods developed in these areas, through the work of scientific and technological researchers, could serve as

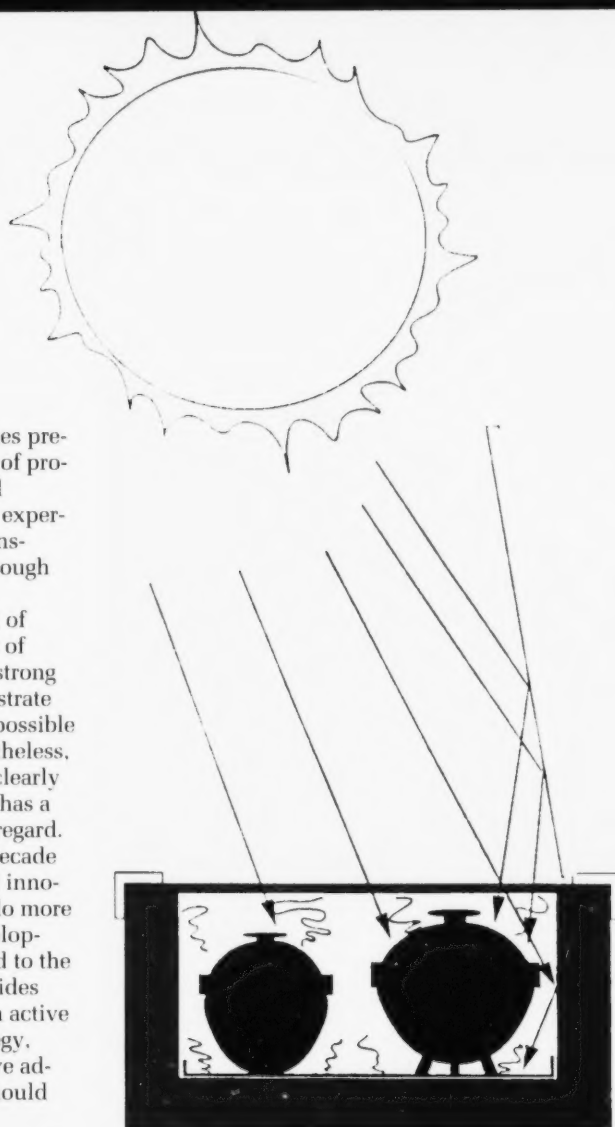
an example to other countries pre-occupied with the problem of prolonging the life of industrial equipment. Already Cuba's expertise in this field is being transferred to other countries through TCDC.

The case of Cuba and that of Chile, where the University of Valparaiso has established strong links with industry, demonstrate that this type of synergy is possible as well as necessary. Nevertheless, the workshop participants clearly felt that Latin America still has a very long way to go in this regard. They concluded that, in a decade marked by competition and innovation, governments must do more to enable research and development institutions to respond to the needs of enterprises. Both sides should strive to establish an active and ongoing common strategy, aimed at gaining competitive advantages. Such a strategy should rest on three pillars:

- Training programmes to provide enterprises with the skilled personnel they need for innovation.
- Formal agreements between academic institutions and industry for the transfer of expertise and the sharing of research.
- Close interaction between the two sides to ensure a regular flow of information on technologies and where they can be obtained.

The overall message of the workshop was that universities can no longer be ivory towers, nor can enterprises be simply producers of merchandise. In combination they both have an essential role to play as driving forces of development.

— Sergio Federovisky



Fetching wood in Guatemala. Solar cooking helps to ease the burden and reduce deforestation.

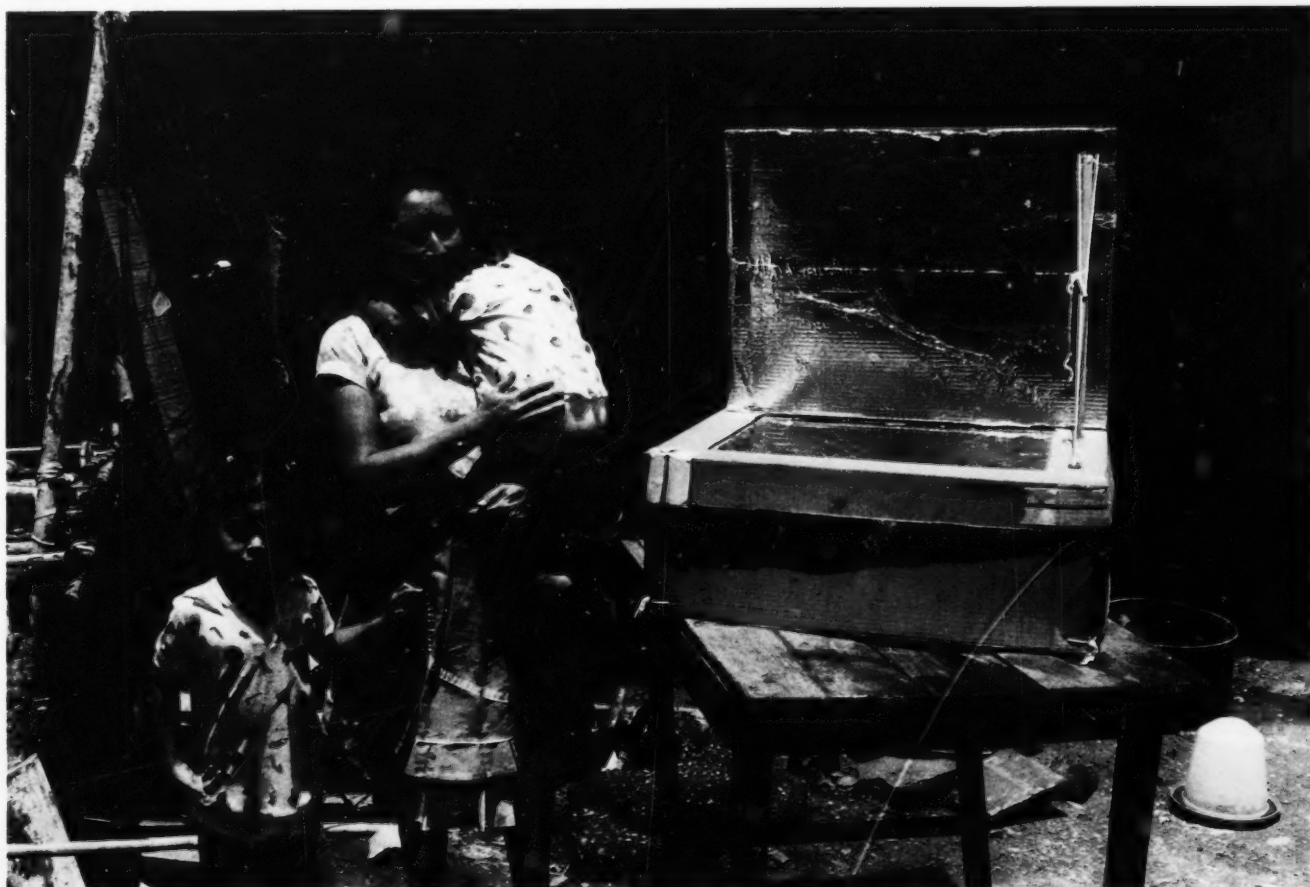
Cooking with Solar Energy

At a time when shortage of fuel for domestic purposes is causing great hardship for millions of people throughout the developing world, many families are finding that their lives are being transformed by a simple and low-cost but highly effective method of cooking by harnessing the sun's rays.

Solar cooking is now beginning to be disseminated through South-South cooperation. In June a TCDC workshop on the subject was held in Honduras, co-sponsored by a group of regional and international NGOs as well as by the United Nations Department of Development Support and Management Services and the UN Development Programme's Regional Bureau for Latin America and the Caribbean. Participants learned how, within Latin America, solar cooking technology is being transferred from country to country and community to community through NGOs and volunteer workers. A network of regional focal points has been established to speed the process.

The solar box cooker consists of two boxes, one within the other, some tin-foil to reflect the sun, and a glass panel to hold the heat in. Heat retention is also enhanced by the use of dark-painted cooking pots. The cost of a cooker depends on the materials used and their local availability. The cheapest model is made from cardboard boxes. More expensive and durable models can be made using wood, metal or corrugated plastic.

Solar box cookers reach temperatures of 95-135 degrees centigrade (200-275 fahrenheit). Cooking with sunshine is possible all year round in the tropics and for about 10 months of the year in temperate zones, even with diffused light. On average, cooking



Solar cooker being used by a Guatemalan family.

time is about double that of a conventional oven, but the food will not stick to the pot or burn, and can be left to cook while other tasks are being performed.

The device can be used for a variety of other purposes, such as water purification, drying, pasteurizing and preparing food for canning. There are commercial uses too, such as boiling rice straw to make paper, dyeing wool and baking bread. In addition, the manufacture of solar cookers offers an opportunity for small-scale entrepreneurship.

An alternative design, developed in China, has a parabolic reflector that looks like a satellite dish, with a pot hooked up to a chain in front. Cooking time is faster, but the disadvantage is that only one pot can cook at a time.

Both the Chinese and Indian governments promote solar cookers as national policy, and in India their

purchase is subsidized. One Indian company now producing sophisticated solar cookers commercially is Solker Enterprises of Madras.

The advantages of solar cookers are many. By reducing dependence on conventional fuels, they save money. In communities that are dependent on fuel wood, solar cooking reduces deforestation and saves women and children the time and labour involved in fetching and carrying the wood. Cooking with sunshine means no danger of burns from open fires and less air pollution, especially indoors from oven smoke and fumes that can cause lung disease. Solar-cooked food is nutritious, since no water is used and therefore all the vitamins are retained.

Following the success of the Honduras workshop, a second world conference, sponsored by the NGO Solar Box Cooker International, is scheduled to be held from 12 to 15 July 1994 at the University of Costa Rica. It is to be hoped that, with more promotion

and training, this sustainable and effective technology will be used to an increasing extent throughout the developing world.

— Roma Stibravy

Further information about solar cooking technology and about the forthcoming conference can be obtained from the author at:

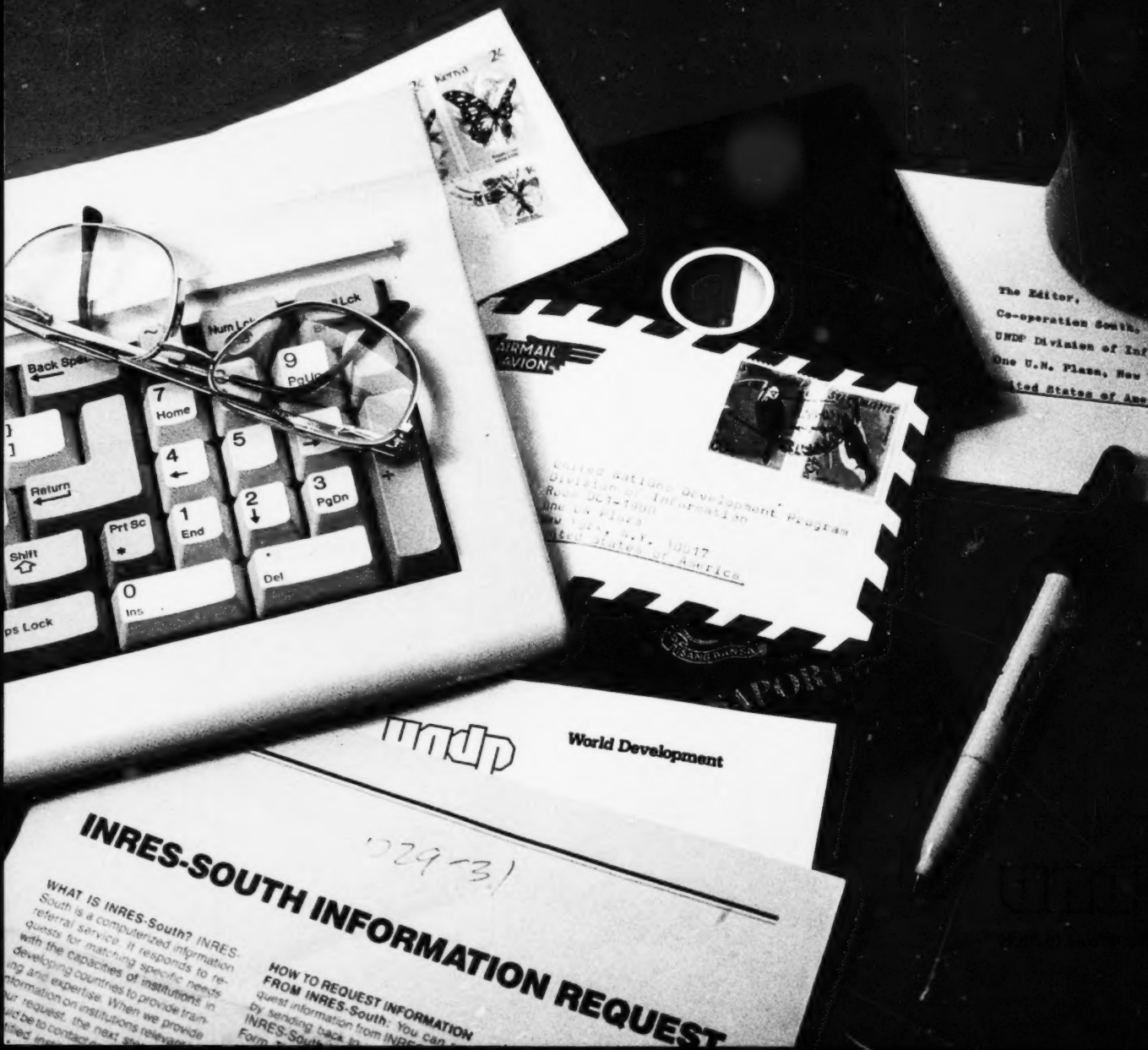
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Matching needs with technology training expertise

With a growing dependence on technology, the United Nations Development Program is seeking to assist developing countries in acquiring the skills and expertise needed to use this technology effectively. The UNDP is now accepting applications for its INRES-SOUTH program. For more information, contact the UNDP, 1000 New York Avenue, New York, NY 10003-1000, USA. Tel: 212/462-4000.

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